AMEDMENT

In The Claims:

1. (currently amended) A method of forming a periodic structure, comprising:

irradiating **a surface of a material with** a ~~uniaxial~~ **linearly polarized single** laser beam**, of which a fluence is above but** near**ly as low as** an ablation threshold**, such as to restrain an ablation as much as possible** ~~to a surface of a material without heat-treating the surface of the material with a reactive gas to form a film as a wave-guide path~~; and

executing an overlapped scanning on the irradiated region, so as to cause [an]**the** ablation at a section where interference has taken place between **a p-polarization component of** an incident beam and a surface scattered wave **of the p-polarization component** generated along the material surface, and to thereby cause spontaneous formation of a periodic structure **having a ripple spacing near a wavelength of the incident beam in a direction perpendicular to a polarization direction of the incident beam**.

2. (original) The method according to claim 1, wherein the step of irradiating the laser beam includes setting the laser scanning speed such that 10 to 300 shots of laser beam irradiation is applied to an identical position, according to a laser spot diameter and a laser oscillating frequency.

3. (previously presented) The method according to claim 1, wherein the step of irradiating the laser beam includes changing an incident angle of the laser beam to the material surface, to thereby change a ripple spacing of the periodic structure.

4. (previously presented) The method according to claim 1, wherein the step of irradiating the laser beam includes irradiating the laser beam at an incident angle, and the step of executing an overlapped scanning includes changing a scanning direction of the laser beam so as to change the periodic structure.

5. (previously presented) The method according to claim 1, wherein the step of irradiating the laser beam includes changing a direction of polarization so as to change a direction of the periodic structure.

6. (previously presented) The method according to claim 1, further comprising utilizing a beam expander either with or without a cylindrical lens, thus expanding the laser beam to irradiate a more extensive area.

7. (previously presented) A method of surface treatment, comprising:

forming a grating structure on a surface of a material, to thereby change surface characteristics of the material,

wherein the step of forming the grating structure includes irradiating a laser beam near an ablation threshold to the surface of the material without heat-treating the surface of the material with a reactive gas to form a film as a wave-guide path; and executing an overlapped scanning on the irradiated region, to thereby cause spontaneous formation of the grating structure.

8. (canceled)

9. (previously presented) The method according to claim 7, wherein the step of forming the grating structure includes forming the grating structure so as to overlap in different directions.

10. (previously presented) The method according to claim 7, wherein the step of forming the grating structure includes disposing the grating structure in a mixed layout in different directions.

11. (previously presented) The method according to claim 7, wherein the step of forming the grating structure includes irradiating a laser beam near an ablation threshold having a plurality of pulses of a different direction of polarization to the surface of the material, such that the pulses do not overlap in time; executing an overlapped scanning on the irradiated region, to thereby cause spontaneous formation of the grating structure so as to overlap in different directions.

12. (previously presented) The method according to claim 7, wherein the step of forming the grating structure includes irradiating a laser beam near an ablation threshold to the surface of the material; and the step of executing an overlapped scanning includes changing the direction of polarization during the scanning, to thereby cause spontaneous formation of the grating structure in a mixed layout in different directions.

13. (previously presented) The method according to claim 7, further comprising utilizing a cylindrical lens to condense the laser beam, thus forming the grating structure in a more extensive area.

14. (previously presented) The method according to claim 7, wherein the grating structure is formed with a ripple spacing of 1 μm or less.

15. (previously presented) The method according to claim 7, wherein the surface characteristics include dustproofness and inhibition of particle adhesion.

16. (previously presented) The method according to claim 7, wherein the surface characteristics include reduction of friction and friction wear.

17. (previously presented) The method according to claim 7, wherein the surface characteristics include reduction of wettability.